

Method for Ultra Low-K Dielectric Deposition

ABSTRACT OF THE DISCLOSURE

The present invention provides a method of forming a semiconductor structure having an ultra low-K dielectric material that adheres well to the substrate. The method includes depositing a low-K material on the top surface of a substrate at a low temperature of no more than 250° by a CVD or spin-on process. The dielectric material is then cured by placing the substrate with the dielectric film in an environment where the temperature is regulated at about 400° or less as the dielectric film is being subjected to a plasma treatment or an E-beam treatment or UV treatment. The environment may further include one or more gases or a mixture of gases selected from the group consisting of H₂, N₂, NH₃, CO₂, all hydride gases and a mixture of these gases.